April 5, 2017

FAQ: Sites Reservoir Diversion

How much water could have been diverted into Sites Reservoir storage from this winter's storms if the reservoir existed today?

Through March 2017, using simplified diversion criteria associated with Alternative C facilities, **over 1.4 million acre-feet** (maf) could have been diverted to Sites Reservoir this water year, which began October 1, 2016. This estimated diversion amount is about 79% of the total capacity of the potential reservoir (1.81 maf) and over two and one half times the average annual diversion to Sites (543 thousand acre-feet (taf)), according to operations simulations.

Simplified diversion criteria include several daily hydrologic condition checks:

1. Delta Status: if the Delta is in "excess" according to DWR's Operations Control Office.
2. Sacramento River Flow: if the flows of the Sacramento River at Freeport and the diversion locations are greater than the required minimums.

If both criteria are met, then diversions would be possible. The above diversion criteria and flow data are available online from Department of Water Resources through the California Data Exchange Center and the State Water Project Operations Control Office. This calculation assumes that all three conveyance options would be used. The daily diversion capacities are:

Tehama-Colusa Canal	4,158 Acre-Feet/day
Glenn-Colusa Canal	3,564 Acre-Feet/day
Delevan Pipeline	3,960 Acre-Feet/day
Total Diversion to Sites	11,682 Acre-Feet/day

For Water Year 2017, excess Delta conditions began November 1st, with excess occurring for eleven days in November and twenty six days in December; the Delta has remained in excess since December 11, 2016. For the six month period of this water year, diversions were allowed for 130 days, with maximum diversion possible for 112 days. Even with the Delta in excess, diversion may be limited due to flow requirements of the Sacramento River. This analysis indicates that Sites Reservoir does not fill quickly during a storm, but does take advantage of the relatively long high flow conditions of the Sacramento River that occur for extended periods after larger storms. For perspective, precipitation in the Sacramento River watershed was 420%, 85%, 138%, 262%, 292%, and 100% of average[i] for the six months October through March. Total potential diversion into Sites Reservoir through the end of March was 1,438 taf.

Because of the recent drought, interest in Sites Reservoir performance during drought has increased. Performance during drought is described in "The Drought and Sites Reservoir FAQ."

[i] Percentages based on the Northern Sierra 8-Station Precipitation Index, Water Year 2017.